CONTENTS

No. 1, February 1992

BEHAVIOR

Hermans, Colin O., and Richard A. Satterlie
Fast-strike feeding behavior in a pteropod mollusk, *Clione limacina* Phipps 1

Wayne, Nancy L., and Gene D. Block
Effects of photoperiod and temperature on egg-laying behavior in a marine mollusk, *Aplysia californica* 8

DEVELOPMENT AND REPRODUCTION

Amemiya, S., and R. B. Emlet
The development and larval form of an echinothurioid echinoid, *Asthenosoma ijimai*, revisited 15

Ausió, Juan
Purification and biochemical characterization of the nuclear sperm-specific proteins of the bivalve mollusks *Agriodesma saxicola* and *Mytilimeria nuttalli* 31

Blades-Eckelbarger, Pamela I., and Nancy H. Marcus
The origin of cortical vesicles and their role in egg envelope formation in the "spiny" eggs of a calanoid copepod, *Centropages velificatus* 41

Chandler, Resa M., Mary Beth Thomas, and Julian P. S. Smith, III
The role of shell granules and accessory cells in eggshell formation in *Convoluta pulchra* (Turbellaria, Acoela) 54

Chia, Fu-Shiang, Ron Koss, Shauna Stevens, and Jeff I. Goldberg
Isolation of neurons of a nudibranch veliger 66

Holland, Linda Z., and Nicholas D. Holland
Early development in the lancelet (=amphioxus) *Branchiostoma floridae* from sperm entry through pronuclear fusion: presence of vegetal pole plasm and lack of conspicuous ooplasmic segregation .. 77

Lee, Youn-Ho, and Victor D. Vacquier
The divergence of species-specific abalone sperm lysins is promoted by positive Darwinian selection 97

ECOLOGY AND EVOLUTION

Gil-Turnes, M. Sofia, and William Fenical
Embryos of *Homarus americanus* are protected by epibiotic bacteria 105

Williams-Howze, Judy, and Bruce C. Coull
Are temperature and photoperiod necessary cues for encystment in the marine benthic harpacticoid copepod *Heteropsyllus nunni* Coull? 109

GENERAL BIOLOGY

Jennings, Joseph B., Lester R. G. Cannon, and Adrian J. Hick
The nature and origin of the epidermal scales of *Notodactylus handschini*–an unusual temnocephalid turbellarian ectosymbiotic on crayfish from northern Queensland 117

Mangum, Charlotte P., James M. Colacino, and Judith P. Grassle
Red blood cell oxygen binding in capitellid polychaetes 129

PHYSIOLOGY

Singarajah, K. V., and F. I. Hárosi
Visual cells and pigments in a demersal fish, the black sea bass (*Centropristis striata*) 135

Tankersley, Richard A., and Ronald V. Dimock, Jr.
Quantitative analysis of the structure and function of the marsupial gills of the freshwater mussel *Anodonta cataracta* 145

RESEARCH NOTES

Feldgarden, Michael, and Philip O. Yund
Allorecognition in colonial marine invertebrates: does selection favor fusion with kin, or fusion with self? 155

Rands, M. L., A. E. Douglas, B. C. Loughman, and R. G. Ratcliffe
Avoidance of hypoxia in a cnidarian symbiosis by algal photosynthetic oxygen 159

The Biological Bulletin Board 163

CONTENTS

No. 2, April 1992

POETRY

Skinner, Dorothy M., and John S. Cook
Carroll M. Williams 165
Mellon, DeForest, Jr.
How the axon got its tale 167

DEVELOPMENT AND REPRODUCTION

Hand, Cadet, and Kevin R. Uhlinger
The culture, sexual and asexual reproduction, and growth of the sea anemone *Nematostella vectensis* 169
McEdward, Larry R.
Morphology and development of a unique type of pelagic larva in the starfish *Pteraster tesselatus* (Echinodermata: Asteroidea) 177

ECOLOGY AND EVOLUTION

Jeffries, William B., Harold K. Voris, and Sombat Poovachiranon
Age of the mangrove crab *Scylla serrata* at colonization by stalked barnacles of the genus *Octolasmis* 188
Kim, Kiho, Walter M. Goldberg, and George T. Taylor
Architectural and mechanical properties of the black coral skeleton (Coelenterata: Antipatharia): a comparison of two species 195
Raimondi, Peter T.
Adult plasticity and rapid larval evolution in a recently isolated barnacle population 210
Shapiro, Daniel F.
Intercolony coordination of zooid behavior and a new class of pore plates in a marine bryozoan ... 221
Van Alstyne, Kathryn L., Chad R. Wylie, Valerie J. Paul, and Karen Meyer
Antipredator defenses in tropical Pacific soft corals (Coelenterata: Alcyonacea). I. Sclerites as defenses against generalist carnivorous fishes 231

NEUROBIOLOGY AND BEHAVIOR

Díaz-Miranda, Lucy, David A. Price, Michael J. Greenberg, Terry D. Lee, Karen E. Doble, and José E. García-Arrarás
Characterization of two novel neuropeptides from the sea cucumber *Holothuria glaberrima* 241
Mackie, G. O., C. E. Mills, and C. L. Singla
Giant axons and escape swimming in *Euplokamis dunlapae* (Ctenophora: Cydippida) 248
Saigusa, Masayuki
Phase shift of a tidal rhythm by light-dark cycles in the semi-terrestrial crab *Sesarma pictum* 257

PHYSIOLOGY

Baker, S. M., and R. Mann
Effects of hypoxia and anoxia on larval settlement, juvenile growth, and juvenile survival of the oyster *Crassostrea virginica* 265
Brown, A. Christine, and Nora B. Terwilliger
Developmental changes in ionic and osmotic regulation in the Dungeness crab, *Cancer magister* 270
Cronin, Thomas W.
Visual rhythms in stomatopod crustaceans observed in the pseudopupil 278

No. 3, June 1992

DEVELOPMENT AND REPRODUCTION

Fong, Peter P., and John S. Pearse
Evidence for a programmed circannual life cycle modulated by increasing daylengths in *Neanthes limnicola* (Polychaeta: Nereidae) from central California 289
Mita, Masatoshi, and Masaru Nakamura
Ultrastructural study of an endogenous energy substrate in spermatozoa of the sea urchin *Hemicentrotus pulcherrimus* 298
Rivest, Brian R.
Studies on the structure and function of the larval kidney complex of prosobranch gastropods 305

MARINE CELL BIOLOGY

Gates, Ruth D., Garen Baghdasarian, and Leonard Muscatine
Temperature stress causes host cell detachment in symbiotic cnidarians: implications for coral bleaching 324

NEUROBIOLOGY AND BEHAVIOR

Mercier, A. Joffre, and Rune T. Russenes
Modulation of crayfish hearts by FMRFamide-related peptides 333

Kulkarni, Gunderao K., and Milton Fingerman
Quantitative analysis by reverse phase high performance liquid chromatography of 5-hydroxytryptamine in the central nervous system of the red swamp crayfish, *Procambarus clarkii* 341
Page, Louise R.
New interpretation of a nudibranch central nervous system based on ultrastructural analysis of neurodevelopment in *Melibe leonina*. I. Cerebral and visceral loop ganglia 348
Page, Louise R.
New interpretation of a nudibranch central nervous system based on ultrastructural analysis of neurodevelopment in *Melibe leonina*. II. Pedal, pleural, and labial ganglia 366

PHYSIOLOGY

Bergles, Dwight, and Sidney Tamm
Control of cilia in the branchial basket of *Ciona intestinalis* (Ascidacea) 382
Latz, Michael I., and James F. Case
Slow photic and chemical induction of bioluminescence in the midwater shrimp, *Sergestes similis* Hansen 391
Fitt, W. K., and S. L. Coon
Evidence for ammonia as a natural cue for recruitment of oyster larvae to oyster beds in a Georgia salt marsh 401
Burton, Ronald S.
Proline synthesis during osmotic stress in megalopa stage larvae of the blue crab, *Callinectes sapidus* .. 409
Combs, Christian A., Nicole Alford, Angela Boynton, Mark Dvornak, and Raymond P. Henry
Behavioral regulation of hemolymph osmolarity through selective drinking in land crabs, *Birgus latro* and *Gecarcoidea lalandii* 416
Ellers, Olaf, and Malcolm Telford
Causes and consequences of fluctuating coelomic pressure in sea urchins 424
Kraus, David W., Jeannette E. Doeller, and Jonathan B. Wittenberg
Hydrogen sulfide reduction of symbiont cytochrome c_{552} in gills of *Solemya reidi* (Mollusca) 435
Wilmot, David B., and Russell D. Vetter
Oxygen- and nitrogen-dependent sulfur metabolism in the thiotrophic clam *Solemya reidi* 444

VIEWS AND DISCUSSION

Grosberg, Richard K.
To thine own self be true? An addendum to Feldgarden and Yund's report on fusion and the evolution of allorecognition in colonial marine invertebrates 454
Yund, Philip O., and Michael Feldgarden
To thine own self be true? Yes! Thou canst not then be false to any other. A reply to Grosberg 458

Index to Volume 182 460